Description

Communications method and communications system

The present invention relates to a communications method according to the preamble to claim 1 and a communications system according to the preamble to claim 12.

In conventional mobile radiotelephone systems, communications information, in particular voice information, is transmitted between mobile terminals or mobile telephones, whereby, to transmit the information, base stations are provided which forward the information arriving from a mobile telephone to the required destination terminal. The base stations also serve as an interface with the fixed telephone network to which line-connected subscriber terminals are connected, and with which communication with the mobile telephones is similarly possible.

In modern mobile radiotelephone systems, e.g. GSM mobile radiotelephone systems (Global System For Mobile Communications), "Teleservices" are additionally offered. A teleservice of this type is, for example, in GSM mobile radiotelephone systems, the "Short Message Services" (SMS), which supports the transmission of short messages comprising up to 160 (7-bit ASCII) alphanumeric characters, between the mobile telephones of the mobile radiotelephone system. Each short message is transmitted in the form of a data packet. A short message of this type is entered via the keypad of one mobile telephone and is presented on the display of the mobile telephone dialed up by the transmitting mobile radiotelephone subscriber.

However, in these known short message services which are offered in conventional mobile radiotelephone systems, a short message can normally be sent to one

destination subscriber only. If a plurality of destination subscribers are intended to be addressed, the short message transmission must be repeated several times with different telephone numbers which are allocated to the individual required destination subscribers. In addition, short messages can only be transmitted between persons who possess a mobile telephone or other mobile terminal which is capable of receiving short information of this type.

The object of the present invention is therefore to propose a communications method and a corresponding communications system which, with simple means, enables the transmission of short messages to a virtually unlimited group of persons.

This object is achieved according to the present invention by a communications method with the features of claim 1 and a communications system with the features of claim 12. The subclaims in each case define preferred and advantageous embodiments of the present invention.

According to the invention, it is proposed to transmit packet-oriented messages, such as SMS short messages or data transmitted by means of GPRS (GSM General Packet Radio Services), from mobile terminals, e.g. mobile telephones, of a mobile radiotelephone system to a TV transmitter unit which converts these messages into TV transmission signals and feeds them into the TV network, so that the messages can be visualized and presented on the screens of all TV sets connected to the TV network.

These short messages can be presented, for example, continuously on a free channel space, or can be incorporated into the videotext of a corresponding TV program.

In this way, subscribers can participate spontaneously

and interactively in television productions or television programs. In this respect, it has hitherto only been known to participate in the respective television program via a telephone voice link, via DTMF-enabled telephones (Dual Tone Multi-Frequency) or via cable-connected data transmission (in particular via the Internet), which requires the corresponding hardware and is consequently expensive.

Furthermore, on the basis of the present invention, it is also possible to create virtual TV chatrooms for chat between a multiplicity of subscribers, or TV marketplaces for submitting sale/purchase advertisements, etc.

With the aid of the present invention, any mobile radio subscriber can address a virtually unlimited group of persons, since the TV transmitter unit selected by him forwards the relevant short messages to all TV sets connected to the television network. In particular, subscribers who possess no mobile terminal can also be addressed. The corresponding subscriber has only to possess a TV set and a mobile telephone in order to participate actively in the communication.

The invention is explained in detail below with reference to the attached drawing.

Fig. 1 shows the simplified structure of a communications system according to an embodiment of the present invention.

Figs 2A and 2B show representations to explain the input and transmission of short messages in the communications system shown in Fig. 1

Fig. 3 shows a representation to explain the visualization of short messages transmitted via the

communications system shown in Fig. 1 on the screen of a TV set.

The communications system shown in Fig. 1 comprises a mobile radiotelephone system, for example a mobile radiotelephone system according to the GSM standard, which is represented by two mobile telephones 1a, 1b and a base station 2. The mobile telephones 1a, 1b transmit communications information via an uplink 7a, 7b to the base station 2, which in turn transmits communications information via the downlink 8a, 8b to the mobile telephones 1a, 1b. The base station 2 serves as an interface, on the one hand between all mobile telephones of the corresponding mobile radiotelephone system and, on the other hand, between the mobile radiotelephone system and a fixed telephone network (not shown), so that it is also possible to telephone or communicate via the mobile telephones 1a, 1b with fixed-network subscribers. The mobile radiotelephone network normally has a cellular structure, whereby a base station 2 is allocated to each radio cell and is responsible for the mobile telephones 1a, 1b located in the corresponding radio cell.

Packet-oriented messages, i.e. information transmitted in the form of data packets, can be transmitted by the mobile telephones 1a, 1b. These packet-oriented messages may, for example, be SMS (Short Message Services) short messages or data transmitted by means of GPRS (GSM General Packet Radio Services). These short messages are entered via the keypad 12a, 12b of the mobile telephone or by means of voice input (through voice recognition on the mobile telephone itself or via a voice server of the mobile radiotelephone network) and are transmitted via a mobile radiotelephone channel to the required mobile radiotelephone subscriber identified via a corresponding telephone number, to be presented there

on the display 11a, 11b.

In addition, a television or TV system is provided which comprises a TV transmitter unit 3 with a terrestrial or cable-connected television network connected thereto. By dialing a telephone number, which is allocated to a specific television program or the corresponding TV transmitter unit 3, any mobile radiotelephone subscriber can transmit short messages, not only to one other mobile radiotelephone subscriber, but also to all TV sets 10a, 10b connected to the television network of the dialed-up TV transmitter unit 3.

The TV transmitter unit 3 has a radio-frequency interface 4 via which short information can be received from a mobile radiotelephone subscriber 1a, 1b, and can be demodulated and decoded. A unit 5 for processing the received short messages and for converting the short messages into a television-compatible format is connected to the radio-frequency interface 4. The information processed in this way is then fed via a TV interface 6 into the television network and transmitted in the form of TV signals via TV signal paths 9a, 9b in a cableless or cable-connected manner to the TV sets 10a, 10b connected to the television network.

The TV transmitter unit 3 does not have to be a complete TV transmitter station, but rather the function of the TV transmitter unit 3 can also be implemented merely by means of a correspondingly designed server, which can be dialed up via a corresponding telephone number from any mobile telephone 1a, 1b and can feed the converted, received short messages into the television network.

The short messages transmitted to the TV sets 10a, 10b can be visualized in different ways on the

corresponding screens. Thus, for example, it is conceivable for the short information always to be transmitted by the TV transmitter unit 2 via a TV transmission channel specifically reserved for this purpose to the TV sets 10a, 10b, whereby a dedicated channel space is provided there to display the currently available short information. The short information can also be incorporated in the TV sets 10a, 10b into the videotext service offered by the various TV programs or TV transmitters. It is also possible for the short information to be transmitted to the TV sets 10a, 10b together with the TV transmission signals allocated to a specific TV program or TV transmitter and for the short information then to be inserted into the normal TV program. The short messages can be presented on the screens of the TV sets 10a, 10b connected to the television network either continuously or in the form of a permanent local display on the corresponding screen.

Additional information, such as the name and/or telephone number of the mobile radiotelephone subscriber sending the short messages, can also be added by the TV transmission station 2 to the short messages.

With the aid of the communications system according to the invention shown in Fig. 1, it is, for example, possible for any mobile radiotelephone subscriber to intervene interactively and spontaneously in a current television program and send messages to the television audience.

It is thus also possible to create virtual TV market places, where mobile radiotelephone subscribers can submit sale or purchase advertisements.

In addition, a virtual TV chat room, for example, can

also be created, which will be explained in detail below with reference to the illustrations shown in Figs 2A, 2B and 3.

As shown in Fig. 2A with reference to the content of the display 11 of a mobile telephone, a mobile radiotelephone subscriber initially enters the short message "Anyone going to the R.E.M. concert next week?" via the keypad of his mobile telephone and transmits this by entering the telephone number "0179 700 800 9", which is allocated to the "MSNBC-Chat TV" application, via the mobile radiotelephone network to a base station 2 (cf. the illustration shown in Fig. 2B). The base station 2 then forwards the short message to a TV transmitter unit 3 corresponding to the dial-up application.

In the TV transmitter unit 3, this short message is converted into a TV transmission signal, is fed into the corresponding television network and transmitted to the TV sets connected thereto. As shown in Fig. 3 with reference to the screen content of a corresponding TV set 10, all short messages transmitted to the TV set 10 of all mobile radiotelephone subscribers are presented in the form of a display scrolling from top to bottom, for example in a free channel space, thereby producing a presentation of messages similar to an Internet chat. In the example shown in Fig. 3, the name and telephone number of the mobile radiotelephone subscriber in each case sending the short messages are presented along with the actual short messages.